

STIC Search Report

EIC 1700

STIC Database Tracking Number: 153239

TO: Helen Pezzuto

Location: 10A29

Art Unit : 1713

May 19, 2005

Case Serial Number: 10/509328

From: Kathleen Fuller

Location: EIC 1700

REMSEN 4B28

Phone: 571/272-2505

Kathleen.Fuller@uspto.gov

Search Notes

There are only 3 references with the desired components. No utility was specified. The first reference is to the applicant but the other 2 have good dates and you may be able to use them.



STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- I am an examiner in Workgroup: Example: 1713
- Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

- Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

* PLEASE GIVE REQUEST TO Mr. K. Fuller. THANKS!

Access DB# 153239

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: HELEN PIZZUTO Examiner #: 70058 Date: 5/11/05
Art Unit: 1713 Phone Number-30 2-1108 Serial Number: 10/509,328
Mail Box and Bldg/Room Location: KEIM-1229 Results Format Preferred (circle) PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc. if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: SEE ATTACHED

Inventors (please provide full names): _____

SCIENTIFIC REFERENCE BB
Sci & Tech Inf. Ctr.

MAY 12 REC'D

Earliest Priority Filing Date: 7/12/02

Pat. & T.M. Office

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

A "polymerizable" mixture containing compound
(I) & (II), wherein at least 10 mol% of (II)
has $m+n=2$. (II) is formed by reacting
at least 1 of (IV) with (V)

- (III) is (meth)acrylic anhydride → cl. 3
 - (IV) is ethanedithiol → cl. 4
 - claim 1 requires a "polymerized" mixture
 - claim 12 requires only a mixture (i.e. does not
need to be a polymerized product).
 - utility: optical lens (ophthalmic, contact lens)
- Thanks!

STAFF USE ONLY

Searcher: K. Fuller

Searcher Phone #: _____

Searcher Location: _____

Date Searcher Picked Up: _____

Date Completed: 5/19/05

Searcher Prep & Review Time: 40

Clerical Prep Time: _____

Type of Search

NA Sequence (#) _____

AA Sequence (#) _____

Structure (#) 3

Bibliographic _____

Litigation _____

Fulltext _____

Patent Family _____

STN ✓

Dialog _____

Questel/Orbit _____

Dr.Link _____

Lexis/Nexis _____

Sequence Systems _____

WWW/Internet _____

=> FILE REG

FILE 'REGISTRY' ENTERED AT 10:25:31 ON 19 MAY 2005

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STRUCTURE FILE UPDATES: 18 MAY 2005 HIGHEST RN 850688-83-4

DICTIONARY FILE UPDATES: 18 MAY 2005 HIGHEST RN 850688-83-4

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> FILE HCAPLUS

FILE 'HCAPLUS' ENTERED AT 10:25:36 ON 19 MAY 2005

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FILE COVERS 1907 - 19 May 2005 VOL 142 ISS 21

FILE LAST UPDATED: 18 May 2005 (20050518/ED)

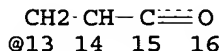
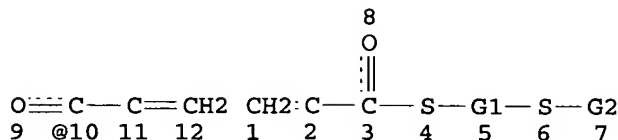
New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE

L13

STR



178 structures from
this query which
Covers I or II

VAR G1=AK/CY

VAR G2=13/10

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE

L15 178 SEA FILE=REGISTRY SSS FUL L13

L16 1 SEA FILE=REGISTRY ABB=ON 540-63-6

L18 1 SEA FILE=REGISTRY ABB=ON 760-93-0

L21 1 SEA FILE=REGISTRY ABB=ON 2051-76-5

L22 298 SEA FILE=REGISTRY ABB=ON 540-63-6/CRN

L23 211 SEA FILE=REGISTRY ABB=ON 760-93-0/CRN

L24 63 SEA FILE=REGISTRY ABB=ON 2051-76-5/CRN

L25 1 SEA FILE=REGISTRY ABB=ON L15 AND L22 AND (L23 OR L24)

L26 2 SEA FILE=HCAPLUS ABB=ON L25

L27 81 SEA FILE=HCAPLUS ABB=ON L15

L28 2235 SEA FILE=HCAPLUS ABB=ON L16

L29 762 SEA FILE=HCAPLUS ABB=ON L18 OR L21

L30 2 SEA FILE=HCAPLUS ABB=ON L27 AND L28 AND L29

L31 3 SEA FILE=HCAPLUS ABB=ON L26 OR L30

=> D L31 1-3 BIB ABS IND HITSTR

L31 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:60569 HCAPLUS

DN 140:112149

TI Dithiol diacrylates used for production of highly transparent plastics for optical materials

IN Schmitt, Bardo; Knebel, Joachim; Hartmann, Patrik

PA Roehm GmbH & Co. KG, Germany

SO PCT Int. Appl., 41 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

PATENT NO.

KIND

DATE

APPLICATION NO.

DATE

PI WO 2004007575

A1

20040122

WO 2003-EP6271

20030613

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

applicant

3 CA references from the polymer or
a mixture of I or II and III and IV

IV - ethanedithiol
III acrylis or methacrylic anhydride
polymer of I or II and III and IV

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

DE 10316671 A1 20040122 DE 2003-10316671 20030410

CA 2492206 AA 20040122 CA 2003-2492206 20030613

EP 1525234 A1 20050427 EP 2003-763638 20030613

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

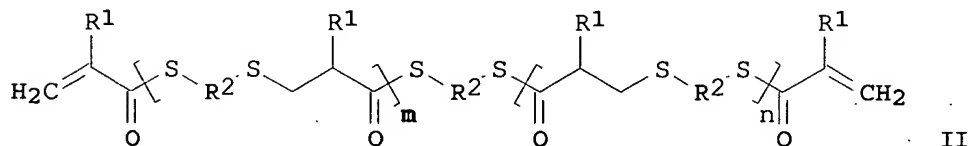
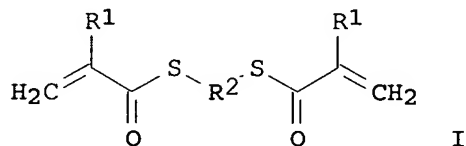
PRAI DE 2002-10231869 A 20020712

DE 2003-10316671 A 20030410

WO 2003-EP6271 W 20030613

OS MARPAT 140:112149

GI



AB A mixture comprises dithiol diacrylates of the general formulas I and II, where R1 substituents are independently hydrogen or Me group, R2 groups are independently linear or branched, aliphatic or cycloaliph. groups, or substituted or unsubstituted aromatic or heteroarom. groups, m and n are whole nos. ≥ 0 , and the total of m and n is > 0 . The mixture comprises $> 10\%$ mol of the compds. of formula II with $m+n=2$, and the mixture is produced by reacting 1.0-2.0 mol of a compound $\text{CH}_2=\text{C}(\text{R}_1)-\text{C}(\text{O})-\text{X}$, X being $-\text{Cl}$, $-\text{OC}(\text{O})\text{C}(\text{R}_1)=\text{CH}_2$, or $-\text{CH}_2\text{OC}(\text{O})\text{C}(\text{R}_1)=\text{CH}_2$, with 1 mol of at least one polythiol $\text{M}-\text{S}-\text{R}_2-\text{S}-\text{M}$, M being hydrogen or a metal cation, in an organic solvent. The mixture of the dithiol diacrylates is used for production of highly transparent polymers for manufacture of optical materials, such as optical lenses and ophthalmic lenses. Thus, 1,2-ethylenedithiol (1 mol) was stirred with NaOH solution (13%, 1.76 mol), the sodium thiolate solution was added with methacrylic anhydride (1.52 mol) into Et acetate-water over 45 min, the reaction mixture was stirred for 2 h at 40° and then cooled to 25° . The recovered reaction mixture contained 1,2-ethylenedithiol dimethacrylate (37.9), and the compds. of the formula II with $m+n=1$ (37.5), $m+n=2$ (13.2), and $m+n=3$ (5.9% mol), R1 being Me, and R2 being 1,2-ethylene. The composition contained $< 1\%$ mol of methacrylic anhydride and was used for production of transparent polymers by radical polymerization

IC ICM C08F022-10
ICS G02B001-04; C07C323-12

CC 37-2 (Plastics Manufacture and Processing)
Section cross-reference(s): 63

ST dithiol diacrylate monomer transparent plastic optical material;
polythioester polythioether diacrylate lens optical material

IT Esterification
Eyeglass lenses
Lenses
Polymerization
Transparent materials
(dithiol diacrylates used for production of highly transparent plastics for optical materials)

IT Solvents
(organic; dithiol diacrylates used for production of highly transparent plastics for optical materials)

IT Polythioethers
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polythioester-, acrylate-terminated; dithiol diacrylates used for production of highly transparent plastics for optical materials)

IT Polyesters, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(thio-, polythioether-, acrylate-terminated; dithiol diacrylates used for production of highly transparent plastics for optical materials)

IT 117675-95-3DP, polymers with acrylate-terminated polythioester-polythioethers 158687-59-3DP, acrylate-terminated, polymers with dithiol diacrylates 333722-25-1DP, polymers with acrylate-terminated polythioester-polythioethers
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(dithiol diacrylates used for production of highly transparent plastics for optical materials)

IT 117675-95-3P 333722-25-1P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(dithiol diacrylates used for production of highly transparent plastics for optical materials)

IT 540-63-6, 1,2-Ethylenedithiol 760-93-0, Methacrylic anhydride 814-68-6, Acryloyl chloride 920-46-7, Methacryloyl chloride 2051-76-5, Acrylic anhydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(dithiol diacrylates used for production of highly transparent plastics for optical materials)

IT 158687-59-3P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(oligomeric; dithiol diacrylates used for production of highly transparent plastics for optical materials)

IT 60-29-7, Diethyl ether, uses 67-64-1, Acetone, uses 75-05-8, Acetonitrile, uses 78-93-3, Methyl ethyl ketone, uses 79-20-9, Methyl acetate 88-72-2, o-Nitrotoluene 91-22-5, Quinoline, uses 93-58-3, Methyl benzoate 93-89-0, Ethyl benzoate 95-49-8, o-Chlorotoluene 95-50-1, o-Dichlorobenzene 96-22-0, 3-Pentanone 98-86-2, Acetophenone, uses 98-95-3, Nitrobenzene, uses 99-08-1, m-Nitrotoluene 99-99-0, p-Nitrotoluene 105-54-4, Ethyl butyrate 106-43-4, p-Chlorotoluene 107-31-3, Methyl formate 107-87-9, 2-Pentanone 108-10-1, Methyl isobutyl ketone 108-20-3, Diisopropyl ether 108-41-8, m-Chlorotoluene

108-90-7, Chlorobenzene, uses 109-06-8, 2-Methylpyridine 109-94-4, Ethyl formate 109-99-9, Tetrahydrofuran, uses 110-12-3, Methyl isoamyl ketone 110-49-6, 2-Methoxyethyl acetate 110-74-7, Propyl formate 110-86-1, Pyridine, uses 111-43-3, Di-n-propyl ether 118-61-6, Ethyl salicylate 119-36-8, Methyl salicylate 119-65-3, Isoquinoline 122-79-2, Phenyl acetate 123-86-4, n-Butyl acetate 131-11-3, Dimethyl phthalate 140-11-4, Benzyl acetate 141-78-6, Ethyl acetate, uses 541-73-1, m-Dichlorobenzene 554-12-1, Methyl propionate 623-42-7, Methyl butyrate 872-50-4, N-Methyl-2-pyrrolidone, uses

RL: NUU (Other use, unclassified); USES (Uses)

(solvent; dithiol diacrylates used for production of highly transparent plastics for optical materials)

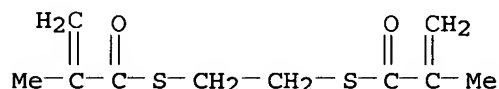
IT 117675-95-3DP, polymers with acrylate-terminated polythioester-polythioethers 158687-59-3DP, acrylate-terminated, polymers with dithiol diacrylates 333722-25-1DP, polymers with acrylate-terminated polythioester-polythioethers

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(dithiol diacrylates used for production of highly transparent plastics for optical materials)

RN 117675-95-3 HCAPLUS

CN 2-Propenethioic acid, 2-methyl-, S,S'-1,2-ethanediyl ester (9CI) (CA INDEX NAME)



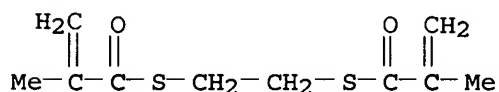
RN 158687-59-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, anhydride, polymer with 1,2-ethanedithiol and S,S'-1,2-ethanediyl bis(2-methyl-2-propenethioate) (9CI) (CA INDEX NAME)

CM 1

CRN 117675-95-3

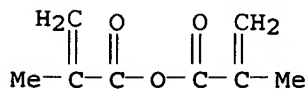
CMF C10 H14 O2 S2



CM 2

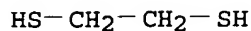
CRN 760-93-0

CMF C8 H10 O3

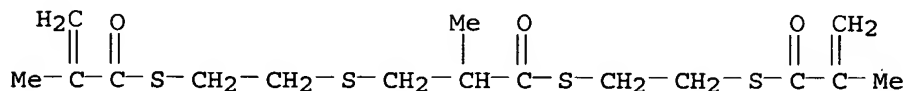


CM 3

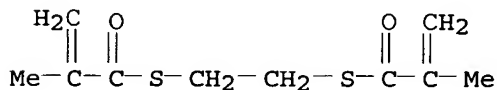
CRN 540-63-6
CMF C2 H6 S2



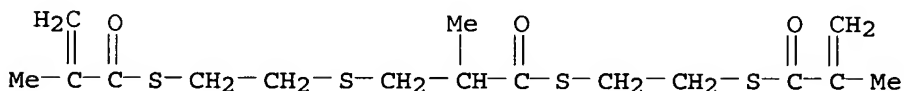
RN 333722-25-1 HCAPLUS
CN 2-Propenethioic acid, 2-methyl-, S,S'-[(2-methyl-1-oxo-1,3-propanediyl)bis(thio-2,1-ethanediyl)] ester (9CI) (CA INDEX NAME)



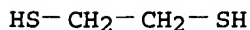
IT 117675-95-3P 333722-25-1P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(dithiol diacrylates used for production of highly transparent plastics for optical materials)
RN 117675-95-3 HCAPLUS
CN 2-Propenethioic acid, 2-methyl-, S,S'-1,2-ethanediyl ester (9CI) (CA INDEX NAME)



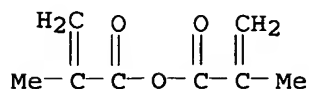
RN 333722-25-1 HCAPLUS
CN 2-Propenethioic acid, 2-methyl-, S,S'-[(2-methyl-1-oxo-1,3-propanediyl)bis(thio-2,1-ethanediyl)] ester (9CI) (CA INDEX NAME)



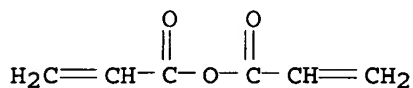
IT 540-63-6, 1,2-Ethylenedithiol 760-93-0, Methacrylic anhydride 2051-76-5, Acrylic anhydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(dithiol diacrylates used for production of highly transparent plastics for optical materials)
RN 540-63-6 HCAPLUS
CN 1,2-Ethanedithiol (6CI, 8CI, 9CI) (CA INDEX NAME)



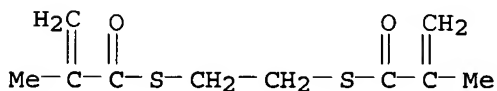
RN 760-93-0 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, anhydride (9CI) (CA INDEX NAME)



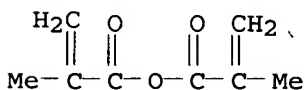
RN 2051-76-5 HCAPLUS
CN 2-Propenoic acid, anhydride (9CI) (CA INDEX NAME)



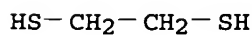
IT 158687-59-3P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(oligomeric; dithiol diacrylates used for production of highly transparent plastics for optical materials)
RN 158687-59-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, anhydride, polymer with 1,2-ethanedithiol and S,S'-1,2-ethanedithyl bis(2-methyl-2-propenethioate) (9CI) (CA INDEX NAME)
CM 1
CRN 117675-95-3
CMF C10 H14 O2 S2



CM 2
CRN 760-93-0
CMF C8 H10 O3



CM 3
CRN 540-63-6
CMF C2 H6 S2



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1999:438759 HCAPLUS

DN 131:59234

TI Method and catalysts for the thioesterification of dimercaptans with methacrylic anhydride in the manufacture of methacrylate bithiol diester monomers

IN Esch, Marc; Riondel, Alain

PA Elf Atochem S. A., Fr.

SO Fr. Demande, 8 pp.

CODEN: FRXXBL

DT Patent

LA French

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2771411	A1	19990528	FR 1997-14937	19971127
	FR 2771411	B1	19991224		
	WO 9928293	A1	19990610	WO 1998-FR2444	19981117
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9912431	A1	19990616	AU 1999-12431	19981117
PRAI	FR 1997-14937	A	19971127		
	WO 1998-FR2444	W	19981117		

AB Methacrylate bithiol diester monomers $H_2C:C(CH_3)COSXSCO(CH_3)C:CH_2$ (X = $CH_2CH_2SCH_2CH_2$, CH_2CH_2 , $CH_2CH_2CH_2$) are prepared in high yield and selectivity by the thioesterification of a dimercaptan HSXSH with methacrylic anhydride in the presence of a acid cation-exchanger catalyst (e.g., Amberlyst 15).

IC ICM C07C327-22

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 23, 48, 67

ST thioesterification prepn methacrylate dithiol diester monomer; dimercaptan thioesterification methacrylic anhydride; cation exchanger thioesterification catalyst manuf methacrylate thiolester

IT Cation exchangers

(acid; catalysts for the thioesterification of dimercaptans with methacrylic anhydride in the manufacture of methacrylate bithiol diester monomers)

IT Thiols (organic), reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(dithiols; method and catalysts for the thioesterification of dimercaptans with methacrylic anhydride in the manufacture of methacrylate bithiol diester monomers)

IT Esterification catalysts

(thioesterification catalysts; acidic cation exchangers for the thioesterification of dimercaptans with methacrylic anhydride in the manufacture of methacrylate bithiol diester monomers)

IT Esterification

(thioesterification; of dimercaptans with methacrylic anhydride in the manufacture of methacrylate bithiol diester monomers)

IT Esters, preparation

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(thiol, methacrylate bithiol diesters; method and catalysts for the

No part-treatment to removal m⁺

thioesterification of dimercaptans with methacrylic anhydride in the manufacture of methacrylate bithiol diester monomers)

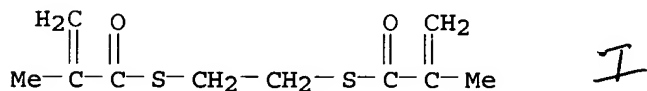
IT 9003-70-7D, sulfonated derivs. 9037-24-5, Amberlyst 15
 RL: CAT (Catalyst use); USES (Uses)
 (method and catalysts for the thioesterification of dimercaptans with methacrylic anhydride in the manufacture of methacrylate bithiol diester monomers)

IT 117651-91-9P 117675-95-3P 158687-60-6P
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
 (method and catalysts for the thioesterification of dimercaptans with methacrylic anhydride in the manufacture of methacrylate bithiol diester monomers)

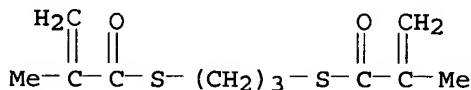
IT 109-80-8, 1,3-Propanedithiol 540-63-6, 1,2-Ethanedithiol 760-93-0, Methacrylic anhydride 3570-55-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (method and catalysts for the thioesterification of dimercaptans with methacrylic anhydride in the manufacture of methacrylate bithiol diester monomers)

IT 117675-95-3P 158687-60-6P
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
 (method and catalysts for the thioesterification of dimercaptans with methacrylic anhydride in the manufacture of methacrylate bithiol diester monomers)

RN 117675-95-3 HCAPLUS
 CN 2-Propenethioic acid, 2-methyl-, S,S'-1,2-ethanediyl ester (9CI) (CA INDEX NAME)

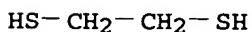


RN 158687-60-6 HCAPLUS
 CN 2-Propenethioic acid, 2-methyl-, S,S'-1,3-propanediyl ester (9CI) (CA INDEX NAME)

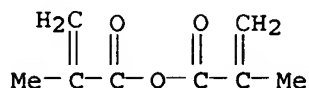


IT 540-63-6, 1,2-Ethanedithiol 760-93-0, Methacrylic anhydride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (method and catalysts for the thioesterification of dimercaptans with methacrylic anhydride in the manufacture of methacrylate bithiol diester monomers)

RN 540-63-6 HCAPLUS
 CN 1,2-Ethanedithiol (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 760-93-0 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, anhydride (9CI) (CA INDEX NAME)



L31 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1994:657067 HCAPLUS
 DN 121:257067
 TI Preparation of sulfur-containing poly(meth)acrylate
 PA Rohm G.m.b.H., Germany
 SO Ger. Offen., 6 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4234251	A1	19940414	DE 1992-4234251	19921010
	EP 592935	A2	19940420	EP 1993-116146	19931006
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE				
	JP 06199963	A2	19940719	JP 1993-251736	19931007
	JP 3363968	B2	20030108		
	US 5384379	A	19950124	US 1993-134737	19931012
PRAI	DE 1992-4234251	A	19921010		

AB The title polymers, suitable for optical applications, are prepared by radical polymerization of $[\text{CH}_2:\text{CRC}(\text{O})\text{S}]_2\text{Z}$ [R = H, Me; Z = ether or thioether group-containing alkylene (optionally branched or cyclic), aryl, alkaryl group] with $\text{CH}_2:\text{CRC}(\text{O})\text{SZS}[\text{CH}_2\text{CHRC}(\text{O})\text{SZS}]_n\text{C}(\text{O})\text{CR}:\text{CH}_2$ (I; n = 1-6). Thus, methacrylic anhydride was treated with 1,2-ethanedithiol to give a colorless monomer mixture comprising ethylene dithiomethacrylate and I (R = Me, Z = ethylene, n = 1-6). Polymerization of the monomer mixture gave a hard, colorless, brittle product with refractive index 1.6079 and Abbe number 35.

IC ICM C08F220-38

ICS C07C327-22; C07C327-28

ICA B29D011-00; G02B001-04

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 35, 73

ST sulfur contg polymethacrylate optical material; ethylene dithiomethacrylate copolymer optical material; thiomethacrylate copolymer high refractive

IT Optical materials

(sulfur-containing polymethacrylates, preparation of)

IT 79-41-4DP, Methacrylic acid, thioesters, polymers 158687-59-3P, 1,2-Ethanedithiol-1,2-ethanedithiol dimethacrylate-methacrylic anhydride copolymer 158687-61-7P, 1,3-Propanedithiol-1,3-propanedithiol dimethacrylate-methacrylic anhydride copolymer

RL: PREP (Preparation)

(preparation of, with high refractive index)

IT 158687-59-3P, 1,2-Ethanedithiol-1,2-ethanedithiol dimethacrylate-methacrylic anhydride copolymer

RL: PREP (Preparation)

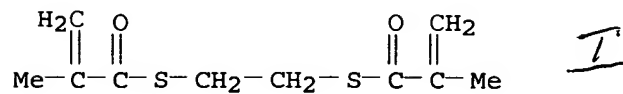
(preparation of, with high refractive index)

RN 158687-59-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, anhydride, polymer with 1,2-ethanedithiol and S,S'-1,2-ethanedithyl bis(2-methyl-2-propenethioate) (9CI) (CA INDEX NAME)

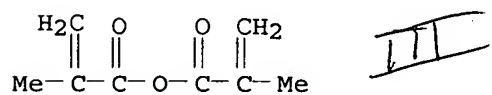
CM 1

CRN 117675-95-3
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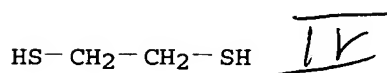
CM 2

CRN 760-93-0
CMF C8 H10 O3



CM 3

CRN 540-63-6
CMF C2 H6 S2



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